REPORT OF THE HEALTH OFFICER OF BANGALORE CITY FOR THE OFFICIAL YEAR 1907-08 BY A. K. PANI, D.P.H., ETC.

INTRODUCTION.

After having worked for three years in Colombo, a town with a population of over 1,75,000 as Assistant Medical Officer of Health, Acting Medical Officer of Health and as lecturer in Hygiene and Public Health in Ceylon Medical College, I rejoined Mysore service on Government offering me a better status and pay though the prospects are not so good as in Colombo, merely with a patriotic feeling.

For the information of the Government and the Council, I beg leave to quote here an extract from the Colombo Municipal Council's resolutions regarding my work in Colombo.

Municipal Office, Colombo No. 35—7004, *dated* 17*th August* 1907.

"That the resignation of Dr. Pani be accepted and that the Council do record its high appreciation of the good work done by Dr. Pani and the assistance rendered in the cause of sanitation during the past three years."

(Sd.) E. M. D'EC. SHORT,
Chairman Municipal Council and Mayor of Colombo.

I assumed charge of the sanitation of the City from Vice-President Mr. M. G. Krishnaswami Rao and the Plague operations from Mr. D. M. Gnanapriam, Honorary Sub-Assistant Surgeon, on 12th August 1907. Immediately after taking charge, I had to pay attention more to plague preventive measures than to the general sanitation as the disease had broken out in an epidemic form.

Though my appointment was sanctioned, my office establishment was not sanctioned till the latter part of last year; consequently it will be seen that the work turned out in the year under report could not be so very satisfactory as I expected. When I first took charge I found the Sanitary Inspectors not doing systematic public health work, so, much of my time was engaged in organising systematic work, opening out several registers, etc., for tabulating correct statistics and recording the work done by Inspectors.

Out of 4 Sanitary Inspectors, I detailed 2 qualified Sanitary Inspectors for abatement of all nuisances inside premises, for periodical inspections of native hotels, bakeries, sweetmeet shops, aerated water factories, and food stuffs, and the other two unqualified Inspectors for the supervision of scavenging and conservancy of the town.

As this is the first annual report sent from this Department, it took time to train the clerks for this sort of work. Fortunately clerk Tholasingam who was transferred from Sanitary Commissioner's Office being intelligent grasped the statistical work and prepared all the necessary statements, charts, diagrams, etc., and opened necessary registers to prepare reports soon.

Statements, etc., were prepared first for the Calendar year but as the Municipality wanted them for the official year the preparation took further time. As there is now only a few days before me to submit by first annual report it must necessarily be brief.

Vital statistical statements are also appended with diagrams in the form of curves showing rise and fall quarterly and in the form of columns annually comparing with the previous year for ready and easy reference.

It is to be noted that the rates are worked out on the last Census population but not on the estimated population at the middle of the year, on account of recurring epidemic of plague year after year, having raised the death rate considerably higher than the birth rate.

Registration of births and deaths.—As this was not compulsory on the part of the public in the official year under report, the total number of births registered by the special registration staff may be somewhat lower, though the total number of deaths is correct on account of strict supervision exercised over burial and cremation grounds.

Births.—One thousand six hundred and ninty-six births were registered during the official year against 1,487 in the previous year, of these 884 males and 812 females. The increase in the year is probably due to better supervision exercised over Registration Department.

The rate per 1,000 living, calculated on the last Census population for the year under report, is 24·4 against 21·4 of last year, *vide* Statement 1 (*a*) and Diagram 1 (*a*).

Statement No. 1 *and Diagram No.* 1.—Diagram compares in the form of curves birth rate with the death rates quarterly. It will be seen that the birth rate curve is almost a straight line maintaining almost a steady rate throughout the year. Birth rate curve is considerably below the death rates curves owing greatly to the disturbing factor plague and imperfect registration of births.

Statement No. 3 *and Diagram No.* 3.—Show the birth rates quarterly according to Municipal Divisions. It will be seen in the diagram that the curve of 1st and 9th divisions is pretty high owing to the better class of people residing in sanitary houses.

The order of divisions according to birth rates for the year is as follows :—*Vide* diagram No. 8 (A) which shows in ascending order.

1st	... 1st and 9th Divisions.
2nd	... 7th and 8th ,,
3rd	.... 4th Division.
4th	... 2nd ,,
5th	.... 3rd ,,
6th	... 5th ,,
7th	... 6th ,,

The ratios of 1st and 9th, 7th and 8th cannot be correct as they are worked out on the last Census population of these extensions. Populations of these extensions have increased enormously since, mostly by people migrating from the City proper. Further 1st and 9th Divisions include Maternity Hospital where number of births belonging to various divisions of the city and probably belonging to outside limits are also registered in the divisions. An arrangement has been made from this year to distribute the births to various divisions, etc., concerned.

Statement No. 5 *and Diagram No.* 5.—Show birth rates quarterly according to races. The curves of Europeans and Eurasians are very high but they cannot be compared with other curves as these two races form a minority of the population in a prosperous condition. The curve of Hindus is almost straight and steady throughout the year. The curves of Mahomedans and Christians are lower than Hindus.

Still-births.—There were 127 still-births in the year under report, *vide* Diagram No. 9.

Deaths.—The total number of deaths for the year was 4,260 including 992 deaths from plague; of these 2,240 were males and 2,020 females, with a ratio of 61·34 per 1,000 living against 58·11 giving an increase of 3·23 which is due to plague having broken out in a more severe form than the previous year.

The total deaths excluding plague was 3,268 against 3,465 giving a ratio of 47·5 against 49·9. The rate 47·5 per 1,000 living, ought to have been the legitimate annual death rate but for plague, *vide* Diagram No. 9 and Statement No. 1 (*a*).

Statement No. 1 and Diagram 1 show quarterly death rates. It will be seen that the death rates shot up in 2nd quarter of the official year while they suddenly dropped in 3rd and 4th quarters.

Statement No. 4 *and Diagram No.* 4.—Show quarterly death rates according to divisions. It will be seen that the rates of almost all the divisions have gone high in 2nd quarter dropping in 3rd and 4th quarters of the official year.

Statement No. 8 *and Diagram No.* 8 (*a*).—Show the death rates according to divisions in descending order. The ratios of 1st and 9th and 7th and 8th divisions cannot be correct as they are worked out on the last Census population of these divisions. The populations of these divisions have increased enormously since, mostly by people migrating into these extensions from the city proper. Further 7th and 8th divisions include deaths, that occurred in Victoria Hospital belonging to various divisions and also non-residents of the city. An arrangement has been made from this year to distribute deaths to various divisions, etc., concerned.

Statement No. 6 *and Diagram No.* 6.—Show death rates according to races quarterly. If we exclude Europeans and Eurasians who form a minority of the population, Mahomedan death rate was high being 63·0, *vide* Statement 6 (*a*).

The order is as follows :—

Europeans	69·10	per 1,000 living.
Mahomedans	63·0	
Hindus	61·7	
Eurasians	59·7	
Christians	45·9	

Statement No. 9 shows deaths during different age periods. The following is the order :—

		No. of deaths.
1st	Under 1 year	891
2nd	Above 60 years	555
3rd	21 to 30 years	523
4th	12 to 20 years	505
5th	2 to 5 years	426
6th	6 to 12 years	386
7th	31 to 40 years	380
8th	41 to 50 years	325
9th	51 to 60 years	269

It works out that 43·1 per cent of the total deaths was from 1 to 30 years and 20·9 per cent of the total deaths was under 1 year, making a total of 64 per cent of total deaths of both young and adult lives.

Statements Nos. 7 and 7 (a).—Show deaths due to principal causes in descending order. If we exclude deaths due to plague and old age, the high mortality due to premature births, bronchitis, malarial cachexia which includes all fevers, phthisis, infantile convulsions deserve to receive special attention to find out their causes and prevention.

Infant mortality.—*Vide* Statement 2 and diagram No. 2. There were 891 deaths of children under 1 year. The deaths were mostly due to premature births and infantile convulsions. The causes of these as already stated deserve special attention. The infant death rate for the official year under report is 525 per 1,000 births registered (*vide* diagram No. 9) against 565 in the previous year.

The ratio of Civil and Military Station, Bangalore, for the official year 1906-07 is 345 per 1,000 births registered.

The infant death rate for the city is very high. The principal causes seem to be due to the following :—

(1) Early marriages and weakly parents.
(2) Insanitary surroundings due to accumulation of both solid and liquid refuse, etc.
(3) Improper feeding.
(4) Insufficient clothing and exposure.
(5) Hereditary tendencies with a history of syphilis, scrofula, etc.

Statement No. 2 and diagram No. 2.—Show infant mortality quarterly as compared with previous year 1906-07.

Plague.—*Vide* special report for the corresponding year under report submitted to the President on the 28th August 1908. Plague broke out at the beginning of official year and kept on throughout the year. The total number of attacks was 1,327, deaths 992 against 612 attacks and 478 deaths in the previous official year, *vide* diagram No. 9.

The usual preventive measures such as destroying large number of rats (76,237 against 36,763), evacuation, segregation, disinfection and inoculation were adopted.

Cholera.—There was only one imported case from Rameswaram. The patient and contacts were removed at once to Infectious Diseases Hospital, where the patient died.

Small-pox.—There were 68 cases of small-pox in the year under report. The disease broke out in a sporadic form in different parts of the city. The patients and contacts were isolated in Infectious Diseases Hospital wherever possible, and the usual preventive measures vaccination and disinfection were carried out.

CONSERVANCY AND GENERAL SANITATION.

Conservancy and scavenging of the city are supervised by two unqualified Sanitary Inspectors. The number of scavengers for the extensions ought to be doubled or even trebled to meet the demand in the ever extending extensions. The scavenging refuse of the city is leased out to private contractors who cart the refuse in village carts with U-shaped basket receptacles with no lids whatever. The carts are still in a primitive stage in the premier Municipality in the State. One is shocked to see the night soil of the city carted out in these primitive carts with scavenging refuse. Very often the contents are spilt on the public roads and streets. One can imagine very well how typhoid and cholera infection, etc., can spread. I hope the Council will at least next year have their own model sanitary carts as in other Municipalities.

One hundred and five cess pits have been cleared, filled up and converted into daily conservable closets. There are still a large number of cess pits in the city. Wherever the cess pits are accessible for conservancy purpose, this department issues notices to convert them into daily conservable closets, but the progress made in this direction is not very satisfactory as the people do not heed notices served by the Municipality and repeated warnings and to bring them to their sense of duty, there is no separate court to deal with the Municipal prosecutions in time. A proposal was made to the President to have a separate court with Bench Magistrates and I since learn that it is being considered by Government. At present the Municipality aims at conserving only night soil from daily conservable closets, allowing the urine to flow in public open drains and sewers for want of water-tight special carts.

Newly constructed public latrines by the Municipal Engineer are in accordance with a standard design but the old ones are more a source of nuisance and they should be reconstructed soon.

Internal sanitation of the city (inspection of premises) is looked after by two qualified Sanitary Inspectors who move about with no uniforms whatever. Very often the public do not recognise them and care for their instructions and warnings. As already suggested I hope the Council will soon fit all the Sanitary Inspectors with suitable uniforms for the proper discharge of their duties.

A perusal of the statements showing the work done by Sanitary Inspectors will show that every other premises visited by them has some nuisance or other. To find out and abate more nuisances, the city requires not less than four more qualified Sanitary Inspectors. It is to be noted that money spent in this direction is well spent in the interest of public health. For the improvement of sanitary defects in private houses 2,589 notices were served during the year and 145 prosecutions were instituted and a sum of Rs. 125-12-0 realized in fines against Rs. 37-12-0 in the previous year.

Proposals made by this department during the year are for the following :—

(1) For compulsory registration of births and deaths.
(2) „ compulsory vaccination.
(3) „ control of dairies and milk supply, *vide* special report No. 589, dated 23rd March 1908.
(4) „ Building Regulations in detail.
(5) „ compulsory notification of infectious diseases and their control.
(6) „ control over native hotels, bakeries, sweetmeat shops, refreshment rooms and ærated water factories.

First and 2nd are passed by the Council and Government, 4th and 6th are receiving their attention and are likely to be passed. I am glad to state that the draft bye-laws still under consideration under (6) for native hotels, etc., are more or less put into force and there is striking improvement already and the hotels, etc., are brought more or less under strict control.

There are 10 bakeries, 18 sweetmeat shops and 53 native hotels in the city. By constant and strict supervision of this department, the floors of all these have been paved with Cuddappah slabs and pointed with cement with sufficient slope for washing daily, the sides of walls to a height of 4 feet have been rendered impervious by cement plastering, chimneys have been greatly improved and enlarged for the proper escape of smoke, and more windows have been opened to admit more light and air, the kneaders in bakeries have been forced to wear white clean aprons. What remains now to be done in sweetmeat shops is to force the vendors to expose all sweets, etc., in glass show cases to prevent contamination from dust, flies and bad odours. Bye-laws that are soon to be brought into force will enforce these as well. Small vendors of sweets and other eatables in bazaars and markets are forced to expose them for sale in glass show cases.

Statistics are being collected to find out which of the areas in the city are malarious and an attempt is made to deal with anopheles breeding pools in the city.

Becteriological examination of public water-supply is undertaken by the Government Bacteriologist and as the records are not in this office they are omitted in the report.

Vaccination.—This was not compulsory in the year under report. There are two vaccinators and a vaccinatrix moving round the city, in addition, vaccination is done in all the Municipal and Government Dispensaries in the city. 1,318 vaccinations were performed in the year against 1,244 in the previous year, of these 1,209 were successful, *vide* Appendix XIX.

Work done by Municipal midwives.—There are 6 qualified Municipal midwives in the city against 5 in the previous year. The number of labour cases conducted in the year is 273 when 1,696 births were registered in the same year. In only 16 per cent of the births, aid of qualified midwives is sought for the rest were managed by unqualified midwives. This is no doubt one of the main causes for still-births. If the qualified midwives were to attend on all labour cases they would be able to perform artificial respiration on new-born infants when they are still and breathless.

Finding that the infant death rate was high, I recently instructed the midwives to attend to all recent births soon after the information reaches them to see that both the mother and infant are properly attended to and to make themselves more popular and useful in the city. It is a common practice to dress the raw navel cords with ash and other dirty stuffs probably containing tetanus bacillus and when infants get tetanus, deaths are incorrectly returned as infantile convulsions. To prevent this, midwives are strictly instructed to see that all new-born infants' navel cords are properly dressed with Iodoform and Boric Acid till they dry, drop and the parts heal.

A check is maintained over Municipal midwives' work to see that they attend to labour cases scientifically with all antiseptics precautions, and occasional lectures are given to them in the office to keep them to the required standard.

Dispensaries.—There are 3 Municipal and 2 Government Dispensaries in the city, the Hospital Assistants in charge of these continued to act as Registrars of Births and Deaths with a subordinate staff to assist them in this work.

All the Hospital Assistants being very elderly and senior men of old school, causes of deaths are not correctly certified. I think a change with younger men of recent schools will mend matters, but this is a matter for the consideration of the Senior Surgeon.

A. K. PANI,
Health Officer.